

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

To: EDMUND PFLEGER
GROSSMAN, TUCKER, PERREAU &
PFLEGER, PLLC
55 SO. COMMERCIAL ST
MANCHESTER, NH 03101

R E C E I V E D
JUN 03 2009

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

<p style="text-align: center;">GROSSMAN, TUCKER, PERREAU & PFLEGER, PLLC</p> <p>Applicant's or agent's file reference ART044PCT</p> <p>International application No. PCT/US2009/035889</p> <p>Applicant ARTHROSURFACE INCORPORATED</p>	<p>Date of mailing (day/month/year)</p> <p>FOR FURTHER ACTION See paragraphs 1 and 4 below</p> <p>International filing date (day/month/year) 03 March 2009</p>
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1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 82 70

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

<p>Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201</p>	<p>Authorized officer: Blaine R. Copenheaver Telephone No. 571-272-7774</p>
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PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

To: EDMUND PFLEGER
GROSSMAN, TUCKER, PERREAULT &
PFLEGER, PLLC
55 SO. COMMERCIAL ST
MANCHESTER, NH 03101

Date of mailing
(day/month/year) **01 JUN 2009**

Applicant's or agent's file reference

ART044PCT

FOR FURTHER ACTION See paragraphs 1 and 4 below

International application No.

PCT/US2009/035889

International filing date

(day/month/year) 03 March 2009

Applicant

ARTHROSURFACE INCORPORATED

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

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1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 82 70

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In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Authorized officer:

Blaine R. Copenheaver

Telephone No. 571-272-7774

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference ART044PCT	FOR FURTHER ACTION	see Form PCT/ISA/220. as well as, where applicable, item 5 below.
International application No. PCT/US2009/035889	International filing date <i>(day/month/year)</i> 03 March 2009	(Earliest) Priority Date <i>(day/month/year)</i> 03 March 2008
Applicant ARTHROSURFACE INCORPORATED		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of:

- ☒ the international application in the language in which it was filed
☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II)

3. ☐ **Unity of invention is lacking** (see Box No. III)

4. With regard to the **title**,

- ☒ the text is approved as submitted by the applicant
☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- ☒ the text is approved as submitted by the applicant
☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 14

- ☒ as suggested by the applicant
☐ as selected by this Authority, because the applicant failed to suggest a figure
☐ as selected by this Authority, because this figure better characterizes the invention

b. ☐ none of the figures is to be published with the abstract

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2009/035889

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A61F 2/30 (2009.01)

USPC - 623/18.11

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - A61F 2/30 (2009.01)

USPC - 623/18.11

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Patbase

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2006/0020343 A1 (EK) 26 January 2006 (26.01.2006) entire document	1, 3, 5, 9, 11, 14, 15
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Y		2, 4, 7, 8, 10, 12, 13, 16
Y	US 2005/0065612 A1 (WINSLOW) 24 March 2005 (24.03.2005) entire document	7, 8, 10, 16
Y	US 2004/0153087 A1 (SANFORD et al) 05 August 2004 (05.08.2004) entire document	2, 12, 13
Y	US 2004/0193281 A1 (GRIMES) 30 September 2004 (30.09.2004) entire document	4

☐ Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

01 April 2009

Date of mailing of the international search report

01 JUN 2009

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450

Facsimile No. 571-273-3201

Authorized officer:

Blaine R. Copenheaver

PCT Helpdesk: 571-272-4300

PCT OSP: 571-272-7774

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: EDMUND PFLEGER
GROSSMAN, TUCKER, PERREAULT &
PFLEGER, PLLC
55 SO. COMMERCIAL ST
MANCHESTER, NH 03101

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) **01 JUN 2009**

Applicant's or agent's file reference
ART044PCT

FOR FURTHER ACTION

See paragraph 2 below

International application No.
PCT/US2009/035889

International filing date (day/month/year)
03 March 2009

Priority date (day/month/year)
03 March 2008

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - A61F2/30 (2009.01)
USPC - 623/18.11

Applicant ARTHROSURFACE INCORPORATED

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Date of completion of this opinion

01 April 2009

Authorized officer:

Blaine Copenheaver

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2009/035889

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - ☒ the international application in the language in which it was filed.
 - ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of:
 - a. type of material
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material
 - ☐ on paper
 - ☐ in electronic form
 - c. time of filing/furnishing
 - ☐ contained in the international application as filed
 - ☐ filed together with the international application in electronic form
 - ☐ furnished subsequently to this Authority for the purposes of search
4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2009/035889

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement			
1. Statement				
Novelty (N)	Claims	2, 4, 7, 8, 10, 12, 13, 16		YES
	Claims	1, 3, 5, 6, 9, 11, 14, 15		NO
Inventive step (IS)	Claims	None		YES
	Claims	1-16		NO
Industrial applicability (IA)	Claims	1-16		YES
	Claims	None		NO
2. Citations and explanations:				
<p>Claims 1, 3, 5, 6, 9, 11, 14 and 15 lack novelty under PCT Article 33(2) as being anticipated by Ek.</p> <p>Regarding claim 1, Ek discloses (embodiment shown in Figs. 16 and 17) a method for preparing an implant site in bone (abstract), comprising: establishing a first working axis extending from said bone (Fig. 16, 616); establishing a second working axis extending from said bone, said second working axis is displaced from said first working axis (Fig. 16, 614); creating a first socket in said bone by reaming about said first working axis; and creating a second socket in said bone, adjacent said first socket, by reaming about said second working axis (Para. 101, The working axis, or working axes may be established by drilling holes into the articular surface 612 guided by the drill bushing.).</p> <p>Regarding claim 3, Ek discloses the method of claim 1, wherein said first and second working axes are established by placing a guide block onto the surface of the bone such that at least two opposing points of the guide blocks contact said bone (Fig. 17, where guide block 602 is atop the bone surface), said guide block having first and second bores therein defining the location of said first and second working axes with respect to said bone (Fig. 17, where bores and respective axes can be seen originating at 614 and 616).</p> <p>Regarding claim 5, Ek discloses the method of claim 1, further comprising: advancing a centering shaft into and extending from said bone along said first working axis (Fig. 10, 12; Para. 99, where the guide rod extends through an axis from originating from the bone); measuring a plurality of points from a fixed position along said centering shaft to said bone, said plurality of point indicative of the curvature of said bone in at least one plane (Para. 131, The geometry or curvature of the overlapping implant portions may be based on the articular surface being replaced, e.g. based on data collected using measuring or mapping techniques. Further, Para. 106, the guide rod and or the cutting instrument may include indicia representative of a cutting depth. According to such an embodiment, the depth of the first excision site may be controlled with reference to such indicia.); and selecting, based on said plurality of points, an implant having a bone-facing surface and a load-bearing surface that substantially matches said curvature of said bone (Para. 121, the implant may be configured to have a bearing surface that may approximate the geometry or curvature of the articular surface being replaced by the implant.)</p> <p>Regarding claim 6, Ek discloses the method of claim 5, further comprising: selecting a guide block having a curvature based on said plurality of points (Fig. 17, where guide body 602 is fitted to the curvature of the bone); advancing said guide block to said bone about said first working axis, said guide block comprising at least two opposing points configured to contact said bone at different locations and first and second bores therein defining the location of said first and second working axes with respect to said bone (Fig. 17, where the guide body 602 comprises two opposing points with corresponding working axes on different locations of the bone).</p> <p>Regarding claim 9, Ek discloses the method of claim 1, further comprising: advancing a cannulated drill guide to contact said bone (Para. 75, Fig. 24, drill guide 200b; Para. 106, in excising or cutting the bone a cutting blade, or more than one cutting blades, may be provided extending from a cannulated shaft. The cannulated shaft may be sized to be rotatably received over the guide rod), said cannulated drill guide comprising a cannulated handle (Fig. 24, seen at element 10c) and a first arcuate tip section removably coupled to a distal end of said cannulated handle (seen in fig. 24), said first arcuate tip section comprising first and second bone contacting points and a bore aligned with a lumen of said cannulated handle (seen in fig. 24 where contacting points align with the handle and the tips arcuately contacts the bone), wherein said first working axis is defined extending from said bone through said bore and said lumen (fig. 16, 616); and installing a first guide pin into said bone through said lumen and said bore and along said first working axis (Para. 96, A guide pin may be inserted into the articular surface along the reference axis.)</p> <p>Regarding claim 11, Ek discloses the method of claim 9, further comprising: removably coupling a guide block onto said distal end of said cannulated handle said guide block comprising a body portion having a curvature based on at least one said depth measurement (Para. 99, The boss extending from the drill guide body may with, the location element to position the drill guide at a predetermined height relative to the articular surface, based on the height of the location element relative to the articular surface), first and second bone contacting points, a first bore aligned with a lumen of said cannulated handle, and a second bore spaced apart from said first bore, said second bore defining said second working axis (Fig. 17, axes and bores seen at 606 and 604); advancing said guide block and cannulated handle over said first guide pin; and installing a second guide pin into said bone through said second bore and along said second working axis (Para. 96, where both bores may be received in a lumen of a cored, or cannulated, drill bit. The cored drill bit may be used to form a pilot hole centered on the guide pin and extending into the articular surface 612.).</p> <p>(Continued in Supplemental Box)</p>				

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2009/035889

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Box V.

Regarding claim 14, Ek discloses the method of claim 11, further comprising: advancing a cannulated tap over said first guide pin and into said bone to tap area of bone surrounding said first guide pin; advancing a tapered post over said first guide pin into the tapped area of bone to secure said tapered post into said bone (Para. 113, The tapered post fixation feature of the implant may be pressed into the tapered socket to provide a secure frictional engagement therebetween.).

Regarding claim 15, Ek discloses the method of claim 14, further comprising: selecting an implant comprising a load-bearing surface that substantially matches said curvature of said bone and having a curvature based on at least one said depth measurement, said implant is dimensioned to fit within, at least, said first and second sockets (Para. 131, The geometry or curvature of the overlapping implant portions may be based on the articular surface being replaced, e.g. based on data collected using measuring or mapping techniques. Further, Para. 106, the guide rod and or the cutting instrument may include indicia representative of a cutting depth. According to such an embodiment, the depth of the first excision site may be controlled with reference to such indicia.); said implant also comprising a bone-facing surface (Para. 132 bone-facing surfaces) comprising a recess configured to mate with the taper of said tapered post; installing said implant into said first and second sockets by mating said recess with said tapered post (Para. 106, precision tapered socket).

Claims 2, 12, and 13 lack an inventive step under PCT Article 33(3) as being obvious over Ek, in view of Sanford et al. (herein after referred to as Sanford).

Regarding claim 2, Ek discloses the method of claim 1. Ek does not disclose wherein said first and second working axes are established, in part, by advancing first and second guide pins into said bone, said guide pins extending from said bone.

Sanford, however, teaches an implant site for a bone (Fig. 19, 72) wherein a first and second working axes are established, in part, by advancing first (Fig. 1, 34) and second (Fig. 1, 40) guide pins into said bone, said guide pins extending from said bone (Fig. 19, where pins 34 and 40 are extending from bone 72). At the time of the invention it would have been obvious to one skilled in the art to include the first and second guide pins taught by Sanford in the method of Ek. The motivation for doing so would be to established increased support for the implant during and after the procedure.

Regarding claim 12, Ek discloses the method of claim 11, further comprising: removably coupling a cannulated bushing into said second bore prior to installing said guide pin (Para. 112 The pin or rod may be sized to be received in the holes in the articular surface 612 provided using the drill guide 600. An excision site may be formed by inserted a distal end of the pin or rod in a hole associated with a working axis 614, or 616 and rotating the cutting instrument with in the hole, the hole in the articular surface may serve as a bushing for the cutting instrument.). Ek does not disclose a second guide pin.

Sanford, however, teaches an implant site for a bone (Fig. 19, 72) wherein a first and second working axes are established, in part, by advancing first (Fig. 1, 34) and second (Fig. 1, 40) guide pins into said bone, said guide pins extending from said bone (Fig. 19, where pins 34 and 40 are extending from bone 72). At the time of the invention it would have been obvious to one skilled in the art to include the first and second guide pins taught by Sanford in the method of Ek. The motivation for doing so would be to established increased support for the implant during and after the procedure.

Regarding claim 13, Ek discloses the method of claim 11, further comprising: advancing a reamer over said guide pin and rotating said reamer about said guide pin to create said socket in said bone (Para. 112, A cutting instrument, as described with respect to the foregoing embodiments, may be used in combination with the guide pins, or guide rods, associated with each working axis 614, 616 to excise a portion of the articular surface 612 and underlying subchondral bone.). Ek does not disclose wherein the reamer is advanced over a second guide pin.

Sanford, however, teaches an implant site for a bone (Fig. 19, 72) wherein a second working axis is established, in part, by advancing first (Fig. 1, 34) and second (Fig. 1, 40) guide pins into said bone, said guide pins extending from said bone (Fig. 19, where pins 34 and 40 are extending from bone 72). At the time of the invention it would have been obvious to one skilled in the art to include the second guide pin taught by Sanford in the method of Ek. The motivation for doing so would be to established increased support for the implant during and after the procedure.

Claims 7, 8, 10 and 16 lack an inventive step under PCT Article 33(3) as being obvious over Ek, in view of Winslow.

Regarding claim 7, Ek discloses the method of claim 5. Ek does not disclose the method further comprising: advancing a sizing trial implant into, at least in part, said first and second sockets, said sizing trial implant having a curvature of at least one surface thereof based on said plurality of points; and confirming that said sizing trial implant fits within said first and second sockets.

Winslow does however teach implantation of prosthetic bone (abstract) comprising advancing a sizing trial implant into, at least in part, said first and second sockets (para. 28, where the trial implant in position in the implant site), said sizing trial implant having a curvature of at least one surface thereof based on said plurality of points; and confirming that said sizing trial implant fits within said first and second sockets (para. 29, where the trial implant is sized to properly fit and determine the location and position of the implant).

At the time of the invention it would have been obvious to one skilled in the art to include the measuring of the implant site as taught by Winslow in the method of Ek. The motivation for doing so would be to properly deduce the position and size of the actual implant prior to implantation, which would assist in avoiding complications.

Regarding claim 8, Ek discloses the method of claim 5. Ek does not disclose further comprising: applying bone adhesive to said implant; and installing said implant, at least in part, into said first and second sockets in the bone.

Winslow does however teaches an implantation of prosthetic bone (abstract) further comprising: applying bone adhesive to said implant; and installing said implant, at least in part, into said first and second sockets in the bone (para. 24). At the time of the invention it would have been obvious to one skilled in the art to include the bone cement taught by Winslow in the method of Ek. The motivation for doing so would be to properly affix the implant to the implant site.

(Continued in Supplemental Box)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2009/035889

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Box V

Regarding claim 10, Ek discloses the method of claim 9, further comprising: advancing a cannulated bone centering shaft over said first guide pin (Para. 96, the guide pin may be received in a lumen of a cored, or cannulated, drill bit, which is part of the centering shaft, 10), said bone centering shaft comprising a cannulated tap portion and a cannulated shaft, a shoulder portion between said tap portion and said shaft, and at least one visual marker on said cannulated shaft (Para. 106, the guide rod and or the cutting instrument may include indicia representative of a cutting depth), driving said tap portion into said bone to a predetermined depth; advancing a cannulated contact probe over said centering shaft, said contact probe comprising an outrigger extending radially from a cannulated shaft, said outrigger comprising a contact point (Para. 94 "contact features"), and a handle comprising visual measuring indicia configured to align with said visual marker, wherein said visual measuring indicia and said visual marker configured to visually display a depth of said contact point when said contact point is advanced to contact said bone (Para. 106, the guide rod and or the cutting instrument may include indicia representative of a cutting depth); and advancing a first reamer over said centering shaft and rotating said reamer about said centering shaft to create said first socket in said bone (Para. 112, A cutting instrument, as described with respect to the foregoing embodiments, may be used in combination with the guide pins, or guide rods, associated with each working axis 614, 616 to excise a portion of the articular surface 612 and underlying subchondral bone.). Ek does not disclose determining a plurality of depth measurements in at least one plane and determining a curvature based on at least one said depth measurement.

Winslow, however, teaches an implantation of prosthetic bone (abstract) comprising determining a plurality of depth measurements in sizing trial implant having a curvature of at least one surface thereof based on said plurality of points; and confirming that said sizing trial implant fits within implant site (para. 29, where the trial implant is sized to properly fit and determine the location and position of the implant). At the time of the invention it would have been obvious to one skilled in the art to include the measuring of the implant site as taught by Winslow in the method of Ek. The motivation for doing so would be to properly deduce the position and size of the actual implant prior to implantation, which would assist in avoiding complications.

Regarding claim 16, Ek discloses the method of claim 15. Ek does not disclose further comprising: applying adhesive to said bone-facing surface prior to said installing said implant.

Winslow does however teach applying adhesive to bone-facing surface prior to said installing said implant (para. 24). At the time of the invention it would have been obvious to one skilled in the art to include the bone cement taught by Winslow in the method of Ek. The motivation for doing so would be to properly affix the implant to the implant site.

Claim 4 lacks an inventive step under PCT Article 33(3) as being obvious over Ek, in view of Grimes.

Regarding claim 4, Ek discloses the method of claim 1, further comprising: establishing a third working axis extending from said bone, said third working axis is displaced from said first and second working axes; and creating a third socket in said bone, adjacent said first and second sockets, by reaming about said third working axis (Para. 92, a plurality of working axes may be established, a drill guide may be employed to create the plurality of axes having a desired predetermined relationship to one another. The axes may be created extending arcuately around at least a portion of the articular surface of the femur.) Ek does not disclose a third axis displaced from said first and second working axes.

Grimes does however teach method for implantation (para. 169) comprising a third axis (para. 171, third axis). At the time of the invention it would have been obvious to one skilled in the art to include a third axis as taught by Grimes in the method of Ek. The motivation for doing so would be to provide an additional direction in which to work with and implant the prosthetic implant.

Claims 1-16 meet the criteria set out in PCT Article 33(4), and thus have] industrial applicability because the subject matter claimed can be made or used in industry.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2009/035889

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: